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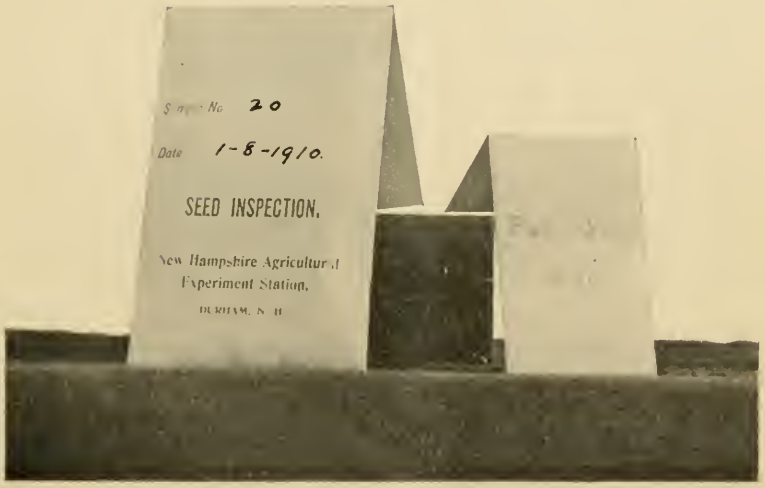
NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION

DEPARTMENT OF AGRONOMY

Results of Seed Tests

For 1910

MADE FOR THE
STATE BOARD OF AGRICULTURE



BY F. W. TAYLOR

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS
DURHAM, N. H.

NEW HAMPSHIRE COLLEGE

OF

AGRICULTURE AND THE MECHANIC ARTS.

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION

DURHAM, N. H.

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The bulletins of the Experiment Station are published at irregular intervals, and are sent *free* to all residents of New Hampshire requesting them.

* Resigned September 1, 1910.

SEED TESTS.

Introduction:

The seed tests herewith reported were made under the provisions of the Pure Seed Law enacted by the General Court in 1909. This law was the outcome of the general agitation for a better quality of agricultural seeds which is being made by those interested all over the country, and New Hampshire may congratulate herself upon being in the van of such a progressive movement. A number of other states have enacted similar laws which have operated for the improvement of seeds in regard to both purity and vitality, and so satisfactory have been the results that the indications are that it is only a matter of time until we shall have federal legislation establishing Seed Control Stations which shall have supervision of all seeds offered for sale in any state.

Seed laboratories have been in operation in Germany for a long time and as a result much of the seed which was unmarketable under the German regulations has been exported to the United States and used in the adulteration of the better grades of domestic-grown seeds. Our farmers are beginning to realize the importance of good seeds and of knowing something about the kind and amount of impurities which may be contained in them as well as the percentage of them which will germinate.

During the year 238 samples of seed were examined, 51 of these for both purity and germination, 185 for germination only and 2 for purity only. It should be stated that we do not attempt to determine the purity of different varieties of corn, oats, barley, peas, beans, melons, etc., except as to the amount of dirt they contain, because this can only be done by having these seeds reproduce their plants and fruit.

The writer desires to acknowledge his appreciation of the work of Mr. W. L. Slate, Jr., assistant in Agronomy, who made the tests and examinations of the samples herewith reported.

Original. No. 20

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION.

Report of Seed Examination.

Received from Yorkshook Seed Co. P.O. Nashua, N.H.

Kind of seed Red Clover Alsike Brand or number 10K, 5M.

Source, or grower

Retail price per pound

Date of receipt 1 9 1910 Found 99.4 per cent pure seed.

Wt. sample taken 1.000 grams. " " weed seed.

Wt. pure seed found .9917 " " " other grass seeds.

Wt. impurities " .0037 " " " inert matter.

Seeds of the following checked plants were found among the impurities:

Name of Plant.	No. Seeds in 1 lb.	Name of Plant.	No. Seeds in 1 lb.
Alfalfa, *Medicago sativa*		Oxtongue, *Picris echioides*	
Alsike clover, *Trifolium hybridum*		Peppergrass, *Lepidium virginicum*	
Barnyard grass, *Echinochloa crus-galli*		Pig-weed, *Amaranthus* spp.	
Black mustard, *Brassica nigra*		Ragweed, *Ambrosia artemisiifolia*	
Bracted plantain, *Plantago aristata*		Red clover, *Trifolium pratense*	
Burdock, *Arctium* spp.		Red Pimpernel, *Anagallis arvensis*	
Canada Thistle, *Cirsium arvense*		Redtop, *Agrostis vulgaris*	
Catchfly, *Silene noctiflora*		Rib-grass, *Plantago lanceolata*	
Catnip, *Nepeta cataria*		Rilwort, *Plantago purshii*	
Chickweed, *Alsine media*		Rugel's plantain, *Plantago rugelii*	
Chicory, *Cichorium intybus*		Selfheal, *Prunella vulgaris*	
Cinquefoil, *Potentilla canadensis*		Shepherd's Purse, *Bursa bursa-pastoris*	
Cow-cockle, *Saponaria vaccaria*		Smartweeds, *Polygonum* spp.	
Crabgrass, *Digitaria sanguinalis*		Sorrell, *Rumex acetosella*	
Dock, *Rumex* spp.		Three-seeded mercury, *Acalypha virginica*	
Field-bindweed, *Convolvulus arvensis*		Timothy, *Phleum pratense*	
Fox-tail, *Setaria glauca*		Vetch, *Vicia* sp.	
Ironweed, *Vernonia noveboracensis*		White clover, *Trifolium repens*	
Lamb's quarters, *Chenopodium album*		Wild carrot, *Daucus carota*	
Lance-leaved plantain, *Plantago lanceolata*		Wild mustard, *Brassica arvensis*	
Moth mullein, *Verbascum blattaria*		Yarrow, *Achillea millefolium*	
Ox-eye Daisy, *Chrysanthemum leucanthemum*		Yellow dock, *Rudbeckia hirta*	
Pepper and salt, *Hesperis matronalis*		Yellow fox-tail, *Chaetochloa glauca*	
Orchard grass, *Dactylis glomerata*		Yellow trefoil, *Medicago lupulina*	
Quack grass, *Agropyron repens*		Miscellaneous or unknown	

Vitality or Germination Report.

	No. Germinated end 6 days.	No. Germinated end days.	No. Not Germinating.	Total No. of Seeds.	Percent of Germination.
First Test	96	1	3	100	97
Duplicate	96	1	3	100	97

Final average reported, 97

Tests made by Report transmitted 1 9 1910

Agronomist, N. H. Agricultural Experiment Station, Durham, N. H.

SAMPLE RECORD SHEET.

SEED EXAMINATION, 1910.

Sample Number	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound	Per cent of Pure Seed	Per cent of Weed Seed	Per cent of other Grass Seeds	Per cent of Inert Matter	Per cent of Germination
1	**Alsike clover,** (*P. A.*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 9, '09. Docks, 227; Canada Blue grass, 1816; Rib-grass, 681; Sorrel, 10,000; Timothy, 108,863.	85.3	1.95	9.05	3.6	70.0
2	**Alsike clover,** (*Fancy*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 9, '09. Redtop, 888; Sorrel, 681; Timothy, 6,356.	98.7	trace	.45	.8	77.0
3	**Millet,** (*German*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 9, '09. Crab-grass, 1,092; Smartweed, 273; Yellow fox-tail, 455.	98.7	.5	.0	.7	87.2
4	**Timothy,** (*Gold Medal*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 9, '09. Alsike clover, 227.	99.5	.0	trace	.5	96.5
5	**Timothy,** (*Pan American*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 9, '09. Alsike clover, 908; Purslane, 227.	99.5	trace	.15	.33	95.7
6	**Millet,** (*Japanese*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 9, '09. Crab-grass, 1,270; Spiny Sida, 635; Smartweed, 1,270; Yellow fox-tail, 1,453.	98.0	1.7	.0	.3	91.5
7	**White clover,** (*Fancy*) Whitney-Eckstein Seed Co. Buffalo, N. Y. Dec. 9, '09. Alsike clover, 2,270; Chickweed, 908; Rib-grass, 454; Smartweed, 25,427; Sorrel, 681.	95.3	2.9	trace	1.7	88.0
8	**Timothy,** (*Choice*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 9, '09. Canada Blue grass, 454; Red clover, 1,816; Redtop, 227.	99.2	trace	.25	.4	94.0
9	**Millet,** (*Common*) Whitney-Eckstein Seed Co., Buffalo, N Y. Dec. 9, '09.	97.5	.0	.0	2.4	87.7
10	**Red clover,** (*Pan American*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 13, '09. Alsike clover, 227; Sorrel, 227; Yellow fox-tail, 227.	99.7	.1	trace	.15	83.7
11	**Alfalfa,** (*Fancy*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 13, '09. Chicory, 272; Wild sunflower, 272; Rib-grass, 362; Yellow trefoil, 635.	97.4	.5	.0	2.04	96.0
12	**Redtop,** (*Fancy*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 13, '09. Timothy, 908.	95.0	.0	trace	4.9	56.7
13	**Millet,** (*Hungarian*) Whitney-Eckstein Seed Co.,Buffalo, N.Y. Dec. 13, '09. Lady's thumb, 273; Lamb's-quarters, 182; Charlock, 273; Pig-weed, 1,000; Ragweed, 182; Smartweed, 182; Timothy, 726; Yellow fox-tail, 182.	98.5	.3	.1	1.0	83.0
14	**Redtop,** (*Choice*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 13, '09. Alsike clover, 1,816; Cinquefoil, 49,032; Mouse-eared chickweed, 1,816; Timothy, 177, 970.	82.0	1.2	8.0	7.8	50.5
15	**Red clover,** (*Eureka*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 13, '09. Alsike clover, 1,635; Kentucky bluegrass, 91; Ragweed, 91; Smartweed, 91; Miscellaneous, 545.	98.3	.2	.3	1.1	86.7
16	**Redtop,** (*Fancy " 3 "*) Whitney-Eckstein Seed Co., Buffalo, N. Y. Jan. 11. Cinquefoil, 908; Timothy, 122, 580; Yarrow, 8,626.	84.9	.3	6.5	8.3	43.2
17	**Red clover,** (*White Mountain*) Holbrook Grocery Co., Keene, N. H. Jan. 18. Green fox-tail, 181; Timothy, 181.	99.7	.1	trace	.2	94.0
18	**Oats,** (*White Mountain*) Holbrook Grocery Co., Keene, N. H. Jan. 18.	...	...	...	...	98.5
19	**Timothy,** (*White Mountain*) Holbrook Grocery Co., Keene, N. H. Jan. 18. Plantain, 252.	99.7	trace	.0	.3	95.5
20	**Red clover,** (*White Mountain*) Holbrook Grocery Co., Keene, N. H. Jan. 18. Alsike clover, 454; Sorrel, 181; Timothy, 272; Yellow fox-tail, 181.	99.2	.1	.2	.5	89.5

SEED EXAMINATION, 1910.—Continued.

Sample Number	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound	Per cent of Pure Seed	Per cent of Weed Seed	Per cent of other Grass Seeds	Per cent of Inert Matter	Per cent of Germination
21	**Alsike clover,** (*White Mountain*) Holbrook Grocery Co., Keene, N. H. Jan. 18. Red clover, 454; Timothy, 21,672.	97.8	.0	2.1	trace	90.0
22	**Redtop,** (*White Mountain*) Holbrook Grocery Co., Keene, N. H. Jan. 29. Timothy, 6,356.	93.6	.0	.2	6.2	63.3
23	**Beans,** (*Pole Hort.*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	53.5
24	**Peas,** (*Sir Thos. Laxton*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	64.5
25	**Beans,** (*Dwarf Long Yellow*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	99.8
26	**Beans,** (*Dwarf Hort.*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	82.0
27	**Beans,** (*Currie's Rust Proof*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	91.0
28	**Peas,** (*Tall Telephone*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	49.0
29	**Beans,** (*Dwarf Golden Wax*)	...	...	...	...	85.5
30	**Peas,** (*Stratagem*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	86.0
31	**Peas,** (*Black-eye Marrowfat*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	91.5
32	**Peas,** (*Dwarf Champ. of England*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	77.5
33	**Peas,** (*Gradie's Tall*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	87.0
34	**Redtop,** (*Fancy, No.* 2403) Whitney-Eckstein Seed Co., Buffalo, N. Y. Feb. 11. Sorrel, 454; Timothy, 3,178; Yarrow, 9,534.	93.5	.3	.2	5.9	49.8
35	**Corn,** (*Sanford*) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	86.5
36	**Millet,** (*Japanese*) Maxfield & Sanborn, Pittsfield, N. H. Feb. 11. Charlock, 91; Ragweed, 454; Smartweed, 454; Yellow fox-tail, 2,360.	97.7	.1	.0	.2	94.8
37	**Red clover** Maxfield & Sanborn, Pittsfield, N. H. Feb. 11. Alsike clover, 1,907; Docks, 91; Green fox-tail, 182; Rib-grass, 454; Timothy, 2,270; Unknown, 273.	97.5	.2	.5	1.8	93.0
38	**Timothy** Maxfield & Sanborn, Pittsfield, N. H. Feb. 11. Canada thistle, 226; Crab-grass, 1,130; Red clover, 908; Redtop, 4,540.	98.3	trace	.2	1.5	90.3
39	**Corn,** (*Sanford, No.* 9,251) Holbrook Grocery Co., Keene, N. H. Feb. 5.	...	...	...	...	95.0
40	**Red clover,** (*Keystone "A"*) Shaw, Hammond & Carney, Portland, Me. Feb. 18.	...	...	...	...	89.0
41	**Alsike clover,** (*Keystone "G"*) Shaw, Hammond & Carney, Portland, Me. Feb. 18.	...	...	...	...	89.3
42	**Alsike clover,** (*Keystone "A"*) Shaw, Hammond & Carney, Portland, Me. Feb. 18.	...	...	...	...	86.5
43	**Timothy** (*Keystone "A"*) Shaw, Hammond & Carney, Portland, Me. Feb. 18.	...	...	...	...	97.5
44	**Timothy,** (*Keystone G"*) Shaw, Hammond & Carney, Portland, Me. Feb. 18.	...	...	...	...	93.3
45	**Timothy,** (*Keystone "P. T."*) Shaw, Hammond & Carney, Portland, Me. Feb. 18.	...	...	...	...	92.0
46	**Red clover,** (*Keystone "G"*) Shaw, Hammond & Carney, Portland, Me. Feb. 18.	...	...	...	...	96.0
47	**Redtop** Hilliard & Kimball, Exeter, N. H. Mar. 14. Ox-eye daisy, 6,810.	93.9	trace	.0	5.9	71.3
48	**Millet,** (*Hungarian*) Hilliard & Kimball, Exeter, N. H. Mar. 14. Old Witch-grass, 1,274; Wild Sun-flower, 91; Pig-weed, 364; Ragweed, 364; Smartweed, 6,915; Yellow fox-tail, 2,548.	93.3	4.3	.0	2.3	89.0
49	**Red clover** Hilliard & Kimball, Exeter, N. H. Mar. 14. Alsike clover, 1,910; Docks, 273; Green fox-tail, 815; Smartweed, 91; Timothy, 635.	98.4	.3	.4	.8	94.3

SEED EXAMINATION, 1910.—Continued.

Sample Number	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound	Per cent of Pure Seed	Per cent of Weed Seed	Per cent of other Grass Seeds	Per cent of Inert Matter	Per cent of Germination
50	**Millet,** (*Hungarian*) Whitney-Eckstein Co., Buffalo, N. Y. Mar. 15. Alsike clover, 4,900; Barnyard grass, 91; Canada thistle, 180; Green fox-tail, 360; Lamb's-quarters, 2,180; Pig-weed, 1730; Ragweed, 180; Timothy, 180; Yellow fox-tail, 1,000.	97.3	1.2	.8	.6	90.3
51	**Corn,** (*Sanford, B* 431) Holbrook Grocery Co., Keene, N. H. Mar. 7.	...	...	...	...	73.0
52	**Peas,** (*Premium Gem*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	98.0
53	**Peas,** (*Nott's Excelsior*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	92.0
54	**Peas,** (*Everbearing*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	85.5
55	**Peas,** (*Tall English*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	93.5
56	**Peas,** (*Alaska*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	100.0
57	**Peas,** (*Yorkshire Hero*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	80.5
58	**Peas,** (*American Wonder*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	95.5
59	**Peas,** (*Dwarf Champion*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	94.5
60	**Beans,** (*Long Yellow*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	99.5
61	**Beans,** (*Dwarf Hort.*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	99.5
62	**Peas,** (*Sutton's Excelsior*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	83.0
63	**Peas,** (*Advancer*) Holbrook Grocery Co., Keene, N. H. Mar. 9.	...	...	...	...	78.0
64	**Peas,** (*Thos. Laxton*) Holbrook Grocery Co., Keene, N. H. Mar. 15.	...	...	...	...	79.5
65	**Peas,** (*Gradie's*) Holbrook Grocery Co., Keene, N. H. Mar. 15.	...	...	...	...	70.5
66	**Tall Nasturtium** Holbrook Grocery Co., Keene, N. H. Mar. 24.	...	...	...	...	60.0
67	**Beans,** (*Hort. Pole*) Holbrook Grocery Co., Keene, N. H. Mar. 19.	...	...	...	...	90.0
68	**Turnip Beet** Holbrook Grocery Co., Keene, N. H. Mar. 19.	...	...	...	...	132.0
69	**Peas,** (*Telephone*) Holbrook Grocery Co., Keene, N. H. Mar. 19.	...	...	...	...	79.0
70	**Mangel-Wurtzel,** (*Mammoth Long Red*) Holbrook Grocery Co., Keene, N. H. Mar. 19.	...	...	...	...	169.0
71	**Sweet Peas,** (*Mixed*) Holbrook Grocery Co., Keene, N. H. Mar. 24.	...	...	...	...	67.5
72	**Dwarf Nasturtiums** Holbrook Grocery Co., Keene, N. H. Apr. 4.	...	...	...	...	72.0
73	**Peas,** (*Canoda Field*) Holbrook Grocery Co., Keene, N. H. Mar. 17.	...	...	...	...	92.0
74	**White clover,** ("*A. L.*") Whitney-Eckstein Seed Co., Buffalo, N. Y. Mar. 19. Alsike clover, 2,000; Rib-grass, 2,270; Selfheal, 1,135; Sorrel, 35,866.	93.4	3.5	.3	2.8	68.3
75	**Alfalfa,** ("5") Whitney-Eckstein Seed Co., Buffalo, N. Y. Mar. 17. Docks, 91; Green fox-tail, 1,085; Lamb's-quarters, 273; Large-seeded Dodder, 180; Red clover, 91; Rib-grass, 454; Unknown, 180.	96.8	.6	trace	2.6	92.5
76	**Timothy** Hilliard & Kimball, Exeter, N. H. Mar. 24. Cinquefoil, 681; Lamb's-quarters, 227; Peppergrass, 227; Plaintain, 1,100.	99.6	.15	.0	.25	97.0
77	**Redtop** W. H. Miller, New Durham, N. H. May 4. Cinquefoil, 18,000; Plantain, 1,800; Peppergrass, 900; Timothy, 90,000.	77.4	2.0	12.0	8.6	68.0

SEED EXAMINATION, 1910.—Continued.

Sample Number	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound	Per cent of Pure Seed	Per cent of Weed Seed	Per cent of other Grass Seeds	Per cent of Inert Matter	Per cent of Germination
78	**Red clover,** (*Northern*) W. H. Miller, New Durham, N. H. May 4. Docks, 180; Green fox-tail, 90; Plantain, 39,000; Rib-grass, 720; Timothy, 1,800; Unknown, 180.	97.4	.7	.2	1.7	93.0
79	**Millet,** (*Hungarian*) W. H. Miller, New Durham, N. H. May 4. Green fox-tail, 180.	99.5	trace	.0	.5	60.5
80	**Timothy** W. H. Miller, New Durham, N. H. May 4. Alsike clover, 9,988; Cinquefoil, 227; Mayweed, 227; Plantain, 454; Sorrel, 227; Redtop, 1,362.	98.2	trace	1.5	.3	92.5
81	**Corn,** (*Native, No. 1*) C. E. Treat, Fitzwilliam Depot, N. H. Apr. 4.	...	...	...	...	63.5
82	**Corn,** (*Commicks Early, No. 2*) C. E. Treat, Fitzwilliam Depot, N. H. Apr. 4.	...	...	...	...	68.0
83	**Red clover** Holbrook, Marshall Co., Nashua, N. H. Apr. 6. Alsike clover, 9,000; Bracted plantain, 500; Chickweed, 91; Crab-grass, 900; Docks, 630; Green fox-tail, 2,700; Lamb's-quarters, 900; Witchgrass, 5,600; Plantain, 9,000; Peppergrass, 91; Pig-weed, 180; Rib-grass, 900; Smartweed, 275; Timothy, 72,000; Yellow fox-tail, 270.	80.6	4.0	7.6	7.8	63.5
84	**Corn,** (*Sanford*) Holbrook, Marshall Co., Nashua, N. H. Apr. 6.	...	...	...	...	93.0
85	**Corn,** (*Leaning*) Holbrook, Marshall Co., Nashua, N. H. Apr. 6.	...	...	...	...	92.0
86	**Peas,** (*Canada Field*) Davison & Ward, Hanover, N. H. Mar. 25.	...	...	...	...	97.5
87	**Peas,** (*Improved Telephone*) C. L. Jenness, Dover, N. H. April 4.	...	...	...	...	70.5
88	**Peas,** (*Amer. Wonder*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	88.0
89	**Peas,** (*Everbearing*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	86.0
90	**Peas,** (*Nott's Excelsior*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	95.5
91	**Sweet corn,** (*Blk. Mexican*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	84.0
92	**Beans,** (*Green Pod Stringless*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	99.0
93	**Sweet corn,** (*Early Crosby*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	83.0
94	**Sweet corn,** (*Stowell's Evergreen*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	87.0
95	**Hubbard squash** C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	84.0
96	**Muskmelon,** (*Rocky-ford*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	53.0
97	**Carrot,** (*Danvers Half-long*) C. L. Jenness, Dover, N. H. Apr. 11.	...	...	...	...	67.0
98	**Spinach,** (*Thick leaf*) C. L. Jenness, Dover, N. H. Apr. 11.	...	...	...	...	32.0
99	**Turnip,** (*Purple top*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	92.0
100	**Cucumber,** (*White Spine*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	80.5
101	**Cabbage,** (*Warren's Stonemason*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	91.0
102	**Radish,** (*Scarlet Turnip*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	90.5
103	**Onion,** (*Danvers Yellow Globe*) C. L. Jenness, Dover, N. H. Apr. 11.	...	...	...	...	68.5
104	**Parsnip,** (*Hollow crown*) C. L. Jenness, Dover, N. H. May 26.	...	...	...	...	20.0
105	**Lettuce,** (*Boston Curled*) C. L. Jenness, Dover, N. H. Apr. 11.	...	...	...	...	51.0
106	**Turnip Beet,** (*Dewings Early Blood*) C. L. Jenness, Dover, N. H. Apr. 14.	...	...	...	...	78.0
107	**Watermelon,** (*Cole's Early*) C. L. Jenness, Dover, N. H. Apr. 11.	...	...	...	...	94.5

SEED EXAMINATION, 1910.—Continued.

Sample Number	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound	Per cent of Pure Seed	Per cent of Weed Seed	Per cent of other Grass Seeds	Per cent of Inert Matter	Per cent. of Germination
108	**Beans,** (*Dwarf Hort.*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	99.0
109	**Pumpkin,** (*Sugar*) C. L. Jenness, Dover, N. H. Apr. 11.	...	...	...	...	88.0
110	**Beans,** (*Kidney Wax*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	91.5
111	**Beans,** (*Bush Lima*) C. L. Jenness, Dover, N. H. Apr. 11.	...	...	...	...	67.0
112	**Sweet corn,** (*Golden Bantam*) C. L. Jenness, Dover, N. H. Apr. 4.	...	...	...	...	89.0
113	**Timothy,** (*No. 1*) Henry Evans & Co., Rochester, N. H. Apr. 1. Chickweed, 226; Red clover, 226; Miscellaneous, 678.	99.5	.2	tracc	.25	...
114	**Timothy,** (*No. 2*) Henry Evans & Co., Rochester, N. H. Apr. 1. Mallow, 226; Red clover, 678; Redtop, 226.	99.5	trace	.2	.3	...
115	**Oats** Morris E. Henderson, Merrimac, N. H. Apr. 14.	...	...	...	...	78.5
116	**Millet,** (*Barnyard*) Thompson & Hoague Co., Concord, N. H. May 6. Ragweed, 1,550; Smartweed, 180; Yellow fox-tail, 8,100; Unknown, 360.	93.5	6.4	.0	trace	88.5
117	**Timothy** Thompson & Hoague Co., Concord, N. H. May 6. Peppergrass, 670; Red clover, 2,043; Redtop, 670; Unknown, 227.	99.4	trace	.3	.3	75.5
118	**Redtop** Thompson & Hoague Co., Concord, N. H. May 6. Cinquefoil, 45,400; Whitetop, 2,000; Peppergrass, 1,500; Timothy, 80,000.	75.0	2.0	14.0	9.0	77.3
119	**Timothy** F. W. Clark, Wilton, N. H. Apr. 15.	...	...	...	...	80.0
120	**Red clover** F. W. Clark, Wilton, N. H. Apr. 15.	...	...	...	...	90.3
121	**Beans,** (*Scarlet Runner*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	86.0
122	**Beans,** (*Long Yellow*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	100.0
123	**Beans,** (*Black Ger. Wax*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	66.5
124	**Beans,** (*Kidney Wax*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	98.0
125	**Beans,** (*Golden Eye Wax*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	98.0
126	**Beans,** (*Bush Lima*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	88.0
127	**Beans,** (*Arlington*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	99.5
128	**Beans,** (*Dwarf Hort.*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	96.5
129	**Beans,** (*Speckled Pole*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	93.5
130	**Beans,** (*Imp. Golden Wax*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	97.0
131	**Beans,** (*Ky. Wonder*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	97.5
132	**Beans,** (*Yellow Eye*) J. B. Varick Co., Manchester, N. H. Apr. 25.	...	...	...	...	98.0
133	**Peas,** (*Imp. Telephone*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	77.5
134	**Peas,** (*Imp. Stratagem*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	82.5
135	**Beans,** (*Rust Proof Blk. Wax*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	98.0
136	**Sweet corn,** (*Early Orange*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	97.0
137	**Beans,** (*Stringless Green Pod*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	84.5
138	**Peas,** (*Yorkshire Hero*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	64.5
139	**Peas,** (*Nott's Excelsior*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	88.0

SEED EXAMINATION, 1910.—Continued.

Sample Number	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound	Per cent of Pure Seed	Per cent of Weed Seed	Per cent of other Grass Seeds	Per cent of Inert Matter	Per cent of Germination
140	**Peas,** (*Amer. Wonder*)	...	...	...	...	96.0
	J. B. Varick Co., Manchester, N. H. May 2.					
141	**Peas,** (*Alaska*)	...	...	...	...	98.0
	J. B. Varick Co., Manchester, N. H. May 2.					
142	**Peas,** (*Gradic's*)	...	...	...	...	85.0
	J. B. Varick Co., Manchester, N. H. May 2.					
143	**Peas,** (*Sutton's Excelsior*)	...	...	...	...	95.5
	J. B. Varick Co., Manchester, N. H. May 2.					
144	**Peas,** (*First and Best*)	...	...	...	...	95.5
	J. B. Varick Co., Manchester, N. H. May 2.					
145	**Peas,** (*Canada Field*)	...	...	...	...	98.0
	J. B. Varick Co., Manchester, N. H. May 2.					
146	**Peas,** (*Thos. Laxton*)	...	...	...	...	89.5
	J. B. Varick Co., Manchester, N. H. May 2.					
147	**Peas,** (*Prem. Gem*)	...	...	...	...	89.5
	J. B. Varick Co., Manchester, N. H. May 2.					
148	**Peas,** (*Champ. of Eng.*)	...	...	...	...	76.0
	J. B. Varick Co., Manchester, N. H. May 2.					
149	**Beans,** (*White Lima*)	...	...	...	...	89.0
	J. B. Varick Co., Manchester, N. H. May 2.					
150	**Peas,** (*Dwarf Champ.*)	...	...	...	...	71.0
	J. B. Varick Co., Manchester, N. H. May 2.					
151	**Peas,** (*Black-eye Marrowfat*)	...	...	...	...	99.0
	J. B. Varick Co., Manchester, N. H. May 2.					
152	**Peas,** (*Bliss Everbearing*)	...	...	...	...	85.0
	J. B. Varick Co., Manchester, N. H. May 2.					
153	**Peas,** (*Advancer*)	...	...	...	...	93.0
	J. B. Varick Co., Manchester, N. H. May 2.					
154	**Peas,** (*Maud S.*)	...	...	...	...	98.5
	J. B. Varick Co., Manchester, N. H. May 2.					
155	**Squash,** (*Boston Marrow*)	...	...	...	...	67.0
	J. B. Varick Co., Manchester, N. H. May 2.					
156	**Muskmelon,** (*Yellow Cantaloupe*)	...	...	...	...	80.0
	J. B. Varick Co., Manchester, N. H. May 2.					
157	**Cucumber,** (*Long Green*)	...	...	...	...	76.5
	J. B. Varick Co., Manchester, N. H. May 2.					
158	**Cucumber,** (*Imp. White Spine*)	...	...	...	...	91.0
	J. B. Varick Co., Manchester, N. H. May 2.					
159	**Pumpkin,** (*Conn. Field*)	...	...	...	...	84.0
	J. B. Varick Co., Manchester, N. H. May 2.					
160	**Hubbard squash**	...	...	...	...	93.5
	J. B. Varick Co., Manchester, N. H. May 10.					
161	**Watermelon,** (*Kolb's Gem*)	...	...	...	...	88.0
	J. B. Varick Co., Manchester, N. H. May 2.					
162	**Radish,** (*White Top*)	...	...	...	...	58.0
	J. B. Varick Co., Manchester, N. H. May 2.					
163	**Radish,** (*Scarlet Globe*)	...	...	...	...	90.5
	J. B. Varick Co., Manchester, N. H. May 2.					
164	**Turnip,** (*Yellow Rutabaga*)	...	...	...	...	98.0
	J. B. Varick Co., Manchester, N. H. May 2.					
165	**Spinach,** (*Summer*)	...	...	...	...	16.5
	J. B. Varick Co., Manchester, N. H. May 2.					
166	**Celery,** (*Giant Pascal*)	...	...	...	...	51.0
	J. B. Varick Co., Manchester, N. H. May 31.					
167	**Carrot,** (*Imp. Long Orange*)	...	...	...	...	53.5
	J. B. Varick Co., Manchester, N. H. May 31.					
168	**Lettuce,** (*Hanson*)	...	...	...	...	100
	J. B. Varick Co., Manchester, N. H. May 31.					
169	**Lettuce,** (*Early Prize Head*)	...	...	...	...	47.0
	J. B. Varick Co., Manchester, N. H. May 31.					
170	**Onion,** (*Yellow Globe*)	...	...	...	...	73.0
	J. B. Varick Co., Manchester, N. H. May 2.					
171	**Turnip,** (*White Globe*)	...	...	...	...	71.0
	J. B. Varick Co., Manchester, N. H. May 2.					
172	**Mangel Wurtzel,** (*Giant*)	...	...	...	...	78.5
	J. B. Varick Co., Manchester, N. H. May 2.					
173	**Beet,** (*Detroit Dark Red*)	...	...	...	...	59.0
	J. B. Varick Co., Manchester, N. H. May 2.					
174	**Cabbage,** (*Early Jersey Wakefield*)	...	...	...	...	54.5
	J. B. Varick Co., Manchester, N. H. May 2.					
175	**Cabbage,** (*Stonemason*)	...	...	...	...	69.5
	J. B. Varick Co., Manchester, N. H. May 2.					

SEED EXAMINATION, 1910.—Continued.

Sample Number	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound	Per cent of Pure Seed	Per cent of Weed Seed	Per cent of other Grass Seeds	Per cent of Inert Matter	Per cent of Germination
176	**White Mustard** J. B. Varick Co., Manchester, N. H. May 12.	...	...	...	...	90.5
177	**Parsnip,** (*Hollow Crown*) J. B. Varick Co., Manchester, N. H. May 31.	...	...	...	...	47.0
178	**Tomatoes,** (*Dwarf Champ.*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	52.0
179	**Carrot,** (*Ox-Heart*) J. B. Varick Co., Manchester, N. H. May 31.	...	...	...	...	55.0
180	**Millet,** (*German*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	84.0
181	**Rape,** (*Dwarf Essex*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	90.5
182	**Barley,** (*Six-Rowed*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	94.5
183	**Barley,** (*Two-rowed*) J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	85.5
184	**Spring Rye** J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	67.5
185	**Buckwheat** J. B. Varick Co., Manchester, N. H. May 2.	...	...	...	...	87.5
186	**Timothy,** (*Pine tree*) Holbrook Grocery Co., Keene, N. H. May 16. Alsike clover, 227; Sorrel, 908.	99.6	.1	trace	.3	95.5
187	**Timothy** Holbrook Grocery Co., Keene, N. H. May 16. Alsike clover, 681; Black mustard, 454; Cinquefoil, 1,135; Plantain, 681; Red clover, 227; Redtop, 4,540.	98.8	.2	.3	.6	87.0
188	**Oats,** (*No. 1*) L. W. Willard, Oxford, N. H. May 12. Green fox-tail, 90; Bind weed, 620; Smartweed, 110; Sorrel, 23; Wheat, 90; Barley, 46.	97.6	.9	.0	1.5	95.0
189	**Oats,** (*No. 2*) L. W. Willard, Oxford, N. H. May 14. Bindweed, 23; Wheat, 69; Barley, 46.	99.2	.3	.0	.5	88.5
190	**Timothy,** (*No. 1*) G. C. Craig, Rumney Depot, N. H. May 12. Old Witch grass, 227; Ox-eye daisy, 227; Pig-weed, 454; Sorrel, 1,130.	98.5	.2	trace	1.3	85.5
191	**Timothy,** (*No. 2*) G. C. Craig, Rumney Depot, N. H. May 12. Sorrel, 227.	99.9	.1	.0	.0	94.3
192	**Beans,** (*Bush Cranberry*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	24.5
193	**Sweet corn,** (*Crosby's*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	87.5
194	**Sweet corn,** (*Golden Bantam*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	93.5
195	**Corn,** (*Sanford*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	92.0
196	**Corn,** (*Stowell's Evergreen*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	87.5
197	**Corn,** (*White Cory's*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	92.0
198	**Beans,** (*Pole Cranberry*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	88.0
199	**Peas,** (*Alaska*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	72.0
200	**Peas,** (*Champ. of Eng.*) Meserve & Bowen, Franklin, N. H. May 12.	...	...	...	...	84.0
201	**Peas,** (*Blk. Eye Marrowfat*) Meserve & Bowen, Franklin, N. H. May 12.	...	...	...	...	89.5
202	**Beans,** (*Blk. Wax*) Meserve & Bowen, Franklin, N. H. May 9.	...	...	...	...	55.5
203	**Peas,** (*Carter's Telephone*) Meserve & Bowen, Franklin, N. H. May 12.	...	...	...	...	50.0
204	**Peas,** (*Nott's Excelsior*) Meserve & Bowen, Franklin, N. H. May 13.	...	...	...	...	86.5
205	**Peas,** (*Amer. Wonder*) Meserve & Bowen, Franklin, N. H. May 13.	...	...	...	...	63.5
206	**Beet,** (*Breck's Dewing*) Meserve & Bowen, Franklin, N. H. May 13.	...	...	...	...	75.5

SEED EXAMINATION, 1910.—Continued.

Sample Number	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound	Per cent of Pure Seed	Per cent of Weed Seed	Per cent of other Grass Seeds	Per cent of Inert Matter	Per cent of Germination
207	**White clover** J. B. Varick Co., Manchester, N. H. May 13.	...	...	...	...	66.3
208	**Crimson clover** J. B. Varick Co., Manchester, N. H. May 13.	...	...	...	...	84.5
209	**Alfalfa** J. B. Varick Co., Manchester, N. H. May 13.	...	...	...	...	88.3
210	**Millet,** (*Hungarian*) Rowe & Bartlett, Springville, Me. May 17. Barnyard grass, 91; Rag-weed, 91; Red clover, 454; Yellow fox-tail, 728.	99.2	.4	.2	.1	80.5
211	**Corn,** (*Flint*) E. W. Lane, Hampton, N. H. May 5.	...	...	...	...	92.0
212	**Oats** E. C. & W. L. Hopkins, Greenfield, N. H. May 9.	...	...	...	...	92.0
214	**Alsike clover,** (*Auburn No.* 31) Whitney-Eckstein Seed Co., Buffalo, N. Y. May 13. Chickweed, 1,145; Green fox-tail, 454; Old Witch-grass, 227; Red clover, 2,510; Sorrel, 454; Timothy, 22,600.	93.6	.4	4.5	1.5	92.5
215	**Redtop,** (*Unhulled*) J. B. Varick Co., Manchester, N. H. May 31.	...	...	...	...	43.0
216	**Orchard grass** J. B. Varick Co., Manchester, N. H. May 31.	...	...	...	...	54.0
217	**R. I. Bent** J. B. Varick Co., Manchester, N. H. May 31.	...	...	...	...	74.0
218	**Corn,** (*Leaning*) C. M. Hildreth & Son, Lebanon, N. H. May 14.	...	...	...	...	90.0
219	**Timothy,** ("*Sun*") Holbrook Grocery Co., Keene, N. H. May 26. Alsike clover, 227	99.9	.0	trace	.15	94.5
220	**Timothy,** (*C. F. P.*) Holbrook Grocery Co., Keene, N. H. May 26. Plantain, 227.	99.4	trace	.0	.5	94.5
221	**Corn,** (*Sanford*) C. M. Hildreth & Son, Lebanon, N. H. May 26.	...	...	...	...	46.5
222	**Peas,** (*Bliss Everbearing*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	80.0
223	**Peas,** (*Telephone*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	80.0
224	**Peas,** (*Early Alaska*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	96.5
225	**Peas,** (*Nott's Excelsior*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	91.5
226	**Peas,** (*Gradie's*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	72.0
227	**Beans,** (*Early Golden Wax*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	97.0
228	**Corn,** (*Early Red Cory*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	91.5
229	**Corn,** (*Country Gentleman*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	97.0
230	**Beans,** (*Mammoth Green Pod*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	98.5
231	**Peas,** (*Amer. Wonder*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	86.5
232	**Sweet corn,** (*Golden Bantam*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	94.0
233	**Corn,** (*Early White Cory*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	86.5
234	**Corn,** (*Stowell's Evergreen*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	85.5
235	**Beans,** (*Dwarf Blk. Wax*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	96.5
236	**Beans,** (*Dwarf Hort.*) R. H. Moore, Franklin, N. H. June 6.	...	...	...	...	96.5
237	**Corn,** (*White Ensilage*) Spaulding & Slade, Walpole, N. H. June 25.	...	...	...	...	75.0
238	**Timothy,** (*No.* 678) Whitney-Eckstein Seed Co., Buffalo, N. Y. June 28. Alsike clover, 227; Sorrel, 454.	99.6	trace	trace	.3	94.0

SUMMARY TABLE, SHOWING THE KINDS OF FOREIGN SEEDS FOUND IN SAMPLES EXAMINED IN 1910, AND THE NUMBER OF SAMPLES IN WHICH THEY WERE FOUND.

Names of Foreign Seeds.	Names of Samples Examined.							
	Red Clover.	Alsike Clover.	White Clover.	Alfalfa.	Timothy.	Redtop.	Millet.	Oats.
Number of Samples Examined.	8	4	2	2	17	8	10	2
Alsike clover	6	..	2	..	7	1	1	..
Barley	..	..	..	..	..	..	..	2
Barnyard grass	..	..	..	..	..	..	2	..
Bindweed	..	..	..	..	..	..	..	2
Black mustard	..	..	..	..	1	..	..	..
Bracted plantain	1	..	..	..	..	..	..	..
Canada bluegrass	..	1	..	..	1	..	..	..
Canada thistle	..	..	..	..	1	..	1	..
Charlock	..	..	..	..	..	..	2	..
Chicory	..	..	..	1	..	..	..	..
Chickweed	1	1	1	..	1	..	..	..
Cinquefoil	..	..	..	..	3	4	..	..
Crab-grass	1	..	..	..	1	..	2	..
Docks	4	1	..	1	..	..	..	..
Dodder	..	..	..	1	..	..	..	..
Green fox-tail	5	1	..	1	..	..	2	1
Kentucky bluegrass	1	..	..	..	..	..	..	..
Lady's thumb	..	..	..	..	..	..	1	..
Lamb's-quarters	1	..	..	1	1	..	2	..
Mallow	..	..	..	..	1	..	..	..
May weed	..	..	..	..	1	..	..	..
Miscellaneous or unknown	3	..	..	1	2	..	1	..
Mouse-eared chickweed	..	..	..	..	..	1	..	..
Ox-eye daisy	..	..	..	..	1	1	..	..
Peppergrass	1	..	..	..	2	2	..	..
Pig-weed	1	..	..	..	1	..	3	..
Plantain	2	..	..	..	5	1	..	..
Purslane	..	..	..	..	1	..	..	..
Rag-weed	1	..	..	..	..	6	..	..
Red clover	..	2	..	1	6	1	..	..
Redtop	..	1	..	..	6	..	..	..
Rib-grass	3	1	2	2	..	..	..	..
Selfheal	..	..	1	..	..	..	..	..
Smartweed	3	..	1	..	..	..	6	1
Sorrel	2	3	2	..	6	1	..	1
Spiny sida	..	..	..	..	..	..	1	..
Timothy	6	4	..	..	..	7	2	..
Wheat	..	..	..	..	..	..	..	2
Whitetop	..	..	..	..	..	1	..	..
Wild Sunflower	..	..	..	1	..	..	..	..
Witch grass	..	1	..	..	1	..	2	..
Yarrow	..	..	..	..	..	2	..	..
Yellow fox-tail	3	..	..	..	..	..	8	..
Yellow trefoil	..	..	..	1	..	..	..	..

TABLE SHOWING RESULTS OF TESTS AND EXAMINATION OF SAMPLES OF SEEDS RECEIVED FROM DECEMBER 1, 1909, TO JULY 1, 1910.

Kind of Seed.	Total number of samples received.	For Purity Test.	For Germination.	Purity Test.										Germination Test.			
				Pure Seed.				Foreign Seed.			Inert Matter.						
				Highest per cent.	Lowest per cent.	Average per cent.	Standard per cent.	Highest per cent.	Lowest per cent.	Average per cent.	Highest per cent.	Lowest per cent.	Average per cent.	Highest per cent.	Lowest per cent.	Average per cent.	Standard per cent.
Alfalfa	3	2	3	97.4	96.8	97.1	98.	.6	.5	.5	2.6	2.0	2.3	96.0	92.5	94.2	88.
Alsike clover	6	4	6	98.7	85.3	93.8	95.	11.0	.5	4.6	3.6	.0	1.5	92.5	70.0	82.4	78.
Barley	2	...	2	....	....	....	...	....	....	...	...	...	...	94.5	85.5	90.0	93.
Beans	34	...	34	....	....	....	...	....	....	...	...	...	...	100.0	24.5	88.3	93.
Beets	6	...	6	....	....	....	...	....	....	...	...	...	...	169.0	59.0	99.0	150.
Buckwheat	1	...	1	....	....	....	...	....	....	...	...	...	...	87.5	....	....	93.
Cabbage	3	...	3	....	....	....	...	....	....	...	...	...	...	91.0	54.5	72.0	93.
Carrot	3	...	3	....	....	....	...	....	....	...	...	...	...	67.0	53.5	58.5	83.
Celery	1	...	1	....	....	....	...	....	....	...	...	...	...	51.0	....	....	63.
Corn (Field)	13	...	13	....	....	....	...	....	....	...	...	...	...	97.0	46.5	83.0	93.
Corn (Sweet)	13	...	13	....	....	....	...	....	....	...	...	...	...	97.0	68.0	87.5	88.
Crim. clover	1	...	1	....	....	....	...	....	....	...	...	...	...	84.5	....	....	88.
Cucumber	3	...	3	....	....	....	...	....	....	...	...	...	...	91.0	76.5	83.0	88.
Lettuce	3	...	3	....	....	....	...	....	....	...	...	...	...	51.0	10.0	36.0	88.
Melon	4	...	4	....	....	....	...	....	....	...	...	...	...	94.5	53.0	78.9	88.
Millet	11	10	11	99.5	93.3	97.3	99.	....	....	...	...	...	...	94.8	60.5	85.3	88.
Mustard	1	...	1	....	....	....	...	....	....	...	...	...	...	90.5	....	....	93.
Nasturtium	2	...	2	....	....	....	...	....	....	...	...	...	...	72.0	60.0	66.0	...
Oats	6	2	6	99.2	97.6	98.4	99.	....	....	...	...	...	...	95.0	88.5	91.8	93.
Onion	2	...	2	....	....	....	...	....	....	...	...	...	...	73.0	68.5	71.0	83.
Orchard grass	1	...	1	....	....	....	...	....	....	...	...	...	...	54.0	....	....	...
Parsnip	2	...	2	....	....	....	...	....	....	...	...	...	...	47.0	20.0	33.5	73.
Peas	56	...	56	....	....	....	...	....	....	...	...	...	...	100.0	49.0	83.6	95.
Pumpkin	2	...	2	....	....	....	...	....	....	...	...	...	...	88.0	84.0	86.0	88.
Radish	3	...	3	....	....	....	...	....	....	...	...	...	...	90.5	58.0	79.7	93.
Rape	1	...	1	....	....	....	...	....	....	...	...	...	...	90.5	....	....	93.
R. I. Bent	1	...	1	....	....	....	...	....	....	...	...	...	...	74.0	....	....	78.
Red clover	11	8	11	99.7	80.6	96.4	98.	11.6	.1	1.8	7.8	.1	1.7	94.3	63.5	87.2	88.
Redtop	9	8	9	95.0	75.0	85.7	95.	16.0	.1	5.8	9.0	5.0	7.1	77.3	43.0	58.1	78.
Rye	1	...	1	....	....	....	...	....	....	...	...	...	...	67.5	....	....	93.
Spinach	2	...	2	....	....	....	...	....	....	...	...	...	...	32.0	16.5	24.3	88.
Squash	3	...	3	....	....	....	...	....	....	...	...	...	...	93.5	67.0	81.5	88.
Timothy	21	17	20	99.9	98.2	99.3	98.	1.5	.0	.2	1.5	.0	.5	97.0	75.5	91.8	88.
Tomatoes	1	...	1	....	....	....	...	....	....	...	...	...	...	52.0	....	....	88.
Turnip	3	...	3	....	....	....	...	....	....	...	...	...	...	98.0	71.0	87.0	93.
White clover	3	2	3	95.3	93.4	94.4	95.	3.8	2.9	3.4	2.8	1.7	2.3	88.0	66.3	74.2	78.
Total,	238	53	237														

From the last Table it may be noted that the average timothy seed on our market during the year was above the standard as regards both purity and germination; the redtop was below as to purity and considerably below as to germination; the average of the clovers was slightly below the standard as to both purity and germination, one sample of red clover having as low as 80.6 per cent. pure seed and a germination of only 63.5 per cent.; the millets were likewise a little below the standards, one sample showing only 60.5 per cent. germination; only two samples of alfalfa were examined for purity and one of these contained dodder.

The average germination of the field corn was 10 per cent. below the standard, one sample showing only 46.5 per cent.; this low average was due to the general poor season for corn in 1909, and the consequent difficulty of securing first-class seed. The average of the sweet corn was practically up to the standard, although one sample showed as low as 68 per cent. The average germination of both beans and peas was below the standard, although samples of each tested as high as 100 per cent., and as low as 24.5 per cent. for beans and 20 per cent. for peas. Two samples of oats were tested for purity, in one of which considerable quantities of weed seed were found.

The Text of The Law:

STATE OF NEW HAMPSHIRE.

IN THE YEAR OF OUR LORD ONE THOUSAND NINE HUNDRED AND NINE.

HOUSE BILL . . . . . NO. 396.

AN ACT.

To Regulate the Sale of Agricultural Seeds.

Be it enacted by the Senate and House of Representatives in General Court convened:

Section 1. Every lot of agricultural seeds, including the seeds of cereals, grasses, forage plants, vegetables, garden plants and white pine trees, but not including those of other trees, shrubs and ornamental plants, which is sold, offered or exposed for sale for seed in bulk or package of one pound or more, within this

state shall be accompanied by a plainly written or printed guarantee, stating first, its percentage of purity from foreign seeds and other matter, and second, its percentage of vitality.

Sect. 2. Sellers or dealers in seeds may base their guarantees upon tests or analyses conducted by themselves, their agents, or by the Secretary of the State Board of Agriculture or his agents *provided* that such tests or analyses shall be made in such a manner and under such conditions as the said secretary may prescribe.

Sect. 3. The results of all tests or analyses of seeds made by the said secretary, together with the names and addresses of the persons from whom the samples of seed were obtained, shall be published annually in a bulletin by the New Hampshire College Experiment Station, and biennially in the report of the State Board of Agriculture. The said secretary shall also publish from time to time in the Quarterly Report of the State Board of Agriculture equitable standards of purity and vitality, together with such information concerning agricultural seeds as may be of public benefit.

Sect. 4. Whoever sells, offers, or exposes for sale or for distribution, within this state, any agricultural seeds heretofore named in this act, without complying with the requirements of sections one and two, or whoever, with intention to deceive, wrongly marks or labels any lot of agricultural seeds, including the seeds of cereals, grasses, forage plants, vegetables, garden plants and white pine trees, but not including those of other trees, shrubs, and ornamental plants, as pertains to their percentage of purity and vitality, shall be punished by a fine not exceeding one hundred dollars for the first offense, and not exceeding two hundred dollars for each subsequent offense.

Sect. 5. The provisions of the four preceding sections shall not apply to any person growing, selling, offering or exposing for sale cereals and other agricultural seeds for food.

Sect. 6. The Secretary of the State Board of Agriculture shall diligently enforce the provisions of sections one and four of this act, and in his discretion prosecute offenses against the same.

The Object of the Law:

The object of this law is in substance the same as that of our pure food and fertilizer laws, namely, to have the buyer know just what he is buying. It is intended to provide a means where-

by our farmers and other purchasers of seeds may have reliable information, on the basis of which they may protect themselves against the introduction of noxious weeds and against loss through weak or otherwise worthless seeds; also to provide a reasonable protection for careful, conscientious dealers against negligent, designing, or unscrupulous ones.

It is not the purpose or intent of the law to work a hardship on our seed dealers or to hurt their legitimate business, and neither is it intended to require farmers and other growers to purchase seeds of a better quality than they desire.

Standards:

The law does not attempt to fix any standards as to purity and vitality, but for the information of those who may desire to know what may be considered as "equitable standards" the following table, offered by the U. S. Department of Agriculture, and based upon investigations made by that department, is given.

STANDARDS OF PURITY AND GERMINATION OF AGRICULTURAL SEEDS.

Seed.	Purity, %	Germination, %	Seed.	Purity, %	Germination, %
Alfalfa,	98	85—90	Lettuce,	99	85—90
Asparagus,	99	80—85	Kafir corn,	98	85—90
Barley,	99	90—95	Melon,	99	85—90
Beans,	99	90—95	Millets,	99	85—90
Beets,	99	*150	Mustard,	99	90—95
Blue grass, Canadian,	90	45—50	Oats,	99	90—95
			Okra,	99	80—85
Blue grass, Kentucky,	90	45—50	Onion,	99	80—85
			Parsley,	99	70—75
Brome, awnless,	90	75—80	Parsnip,	95	70—75
Buckwheat,	99	90—95	Peas,	99	93—98
Cabbage,	99	90—95	Pumpkins,	99	85—90
Carrot,	95	80—85	Radish,	99	90—95
Cauliflower,	99	80—85	Rape,	99	90—95
Celery,	98	60—65	Redtop,	95	75—80
Clover, alsike,	95	75—80	Rye,	99	90—95
Clover, crimson,	98	85—90	Salsify,	98	75—80
Clover, red,	98	85—90	Sorghum,	98	85—90
Clover, white,	95	75—80	Spinach,	99	80—95
Collard,	99	90—95	Spurry,	99	85—90
Corn, field or ensilage,	99	90—95	Squash,	99	85—90
			Timothy,	98	85—90
Corn, sweet,	99	85—90	Tomato,	98	85—90
Cowpea,	99	85—90	Turnip,	99	90—95
Cucumber,	99	85—90	Tobacco,	98	75—80
Eggplant,	99	75—80	Wheat,	99	90—95
Fescue, meadow,	95	85—90			

* Each beet fruit or "ball" is likely to contain from 2 to 7 seeds. One hundred balls should yield at least 150 sprouts.

The term "percentage of vitality," as used in the law, will be interpreted to mean the percentage of germination, or the number of seeds in 100 which show their vitality by germinating under laboratory test conditions.

It should be kept in mind that any fixed standard below that which is possible to be attained would be undesirable both for the seedsman and the farmer. Dealers should recognize this fact and aim to handle only the best seeds that can be obtained, and thus gain for themselves a reputation and profit for as high standards of quality and purity as may be reasonably attained. Many conditions affect the vitality of seeds,—the products of certain seasons being unavoidably poor. Many difficulties also attend the separation of certain varieties of farm and garden seeds from certain common weed seeds, and impurities are the result. Seedsmen and farmers, alike, should recognize these facts. But whether the seeds are good or bad, we must know *how* good or bad they are.

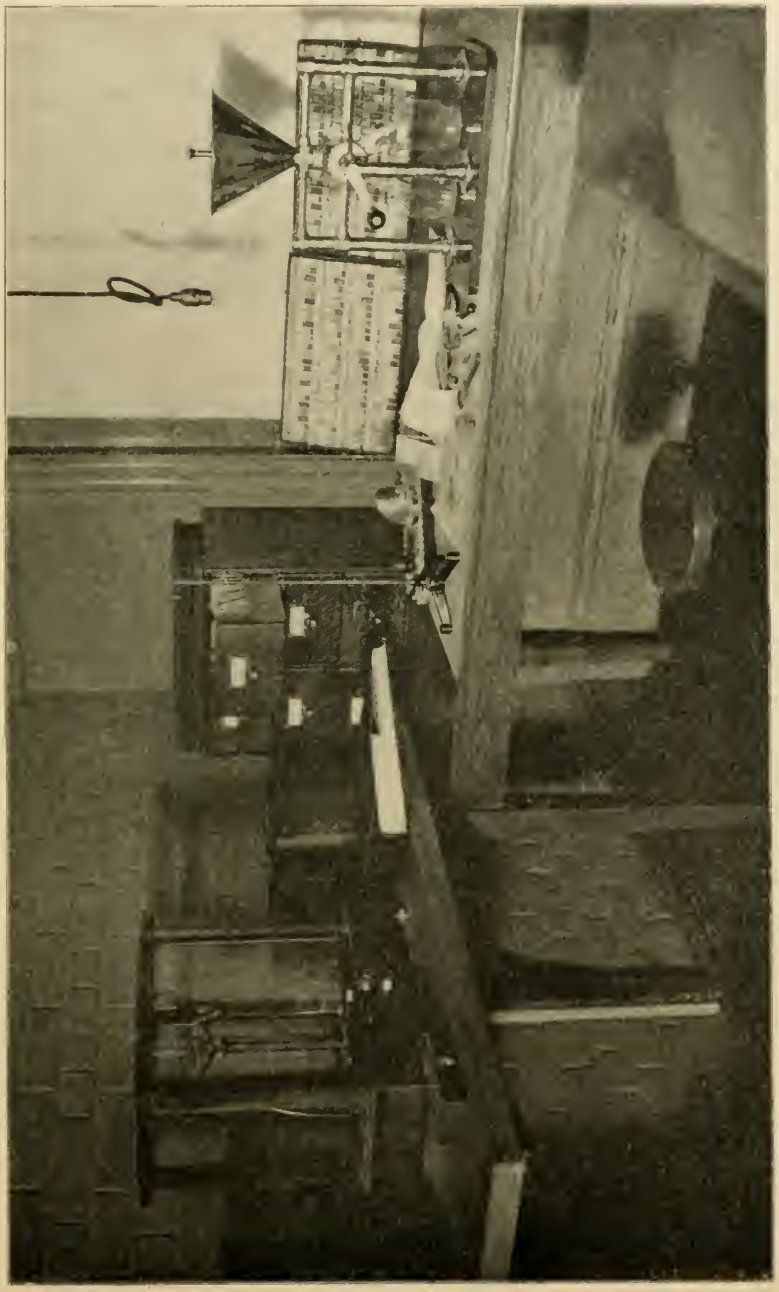
Labeling:

The law does not apply to the common five and ten-cent packages of garden and flower seeds. Only seeds sold in bulk or in packages of one pound or more are subject to the provisions of the law and are required to be accompanied by a guarantee stating their percentage of purity and vitality.

The guarantee or label may be of any form desired by the seller of the seeds, as a tag, sticker, or direct brand upon the container. It must, however, be plainly written or printed, and placed distinctly visible to the purchaser. Each dealer will provide his own labels.

Tests and Examinations:

Section two of the law states the provisions under which the tests and analyses shall be made. The Secretary of the State Board of Agriculture has appointed F. W. Taylor, Agronomist of the Experiment Station, as his regular agent for making all tests and analyses in this state. The sellers or dealers who desire to base their guarantees upon tests made by themselves or their agents must first secure the approval by the Secretary of the State Board of Agriculture of the methods to be used in making the tests, and of the person who is to conduct them.



A Corner in the Seed Testing Room.

Taking of Samples:

To secure a fair average sample of a lot or bulk, take small quantities from all of the bags or from different parts of any particular bulk. Mix thoroughly and take out the sample to be inspected. When the seeds are in bags or large bins, the use of a grain sampler is most convenient, since this will insure getting seeds from the top, middle and bottom alike. Since the report of the analysis is based upon the nature of the sample inspected, it is important that the sample be carefully taken.

Size and Amount of Samples:

The size and amount of the samples necessary for a test will depend upon the size and weight of the seeds. About one-half ounce, or a tablespoonful of the smaller grass and vegetable seeds like alsike and white clover, redtop, lettuce, onions, radish, turnip, etc.; about one ounce or two tablespoonfuls of the larger seeds, like timothy, millet, red clover, alfalfa, rape, etc.; and about four ounces, or a small cupful of the cereal grains or vegetable seeds, like oats, barley, corn, peas, beans, etc., should be sent.

Sending of Samples:

Samples sent to the Experiment Station for testing should be enclosed in a strong paper envelope and securely fastened. Single samples should be sent by mail at the customary merchandise rates. When a number of samples are to be sent they should be put up securely in a single package and forwarded by mail or express, whichever way is the cheaper. Samples should not be sent in bottles or glass jars. Each sample sent in should be marked as follows:

Name and address of sender;
Date of sending;
Kind of seed;
Brand name (if any), and number of package;
Purity or germination test desired (one or both).

Write a letter stating the number and kind of samples sent so that their receipt may be promptly acknowledged.

Address all samples and communications regarding the same to F. W. Taylor, Experiment Station, Durham, N. H.

Reporting Results of Tests:

Reports upon the purity of samples can usually be furnished within two or three days after they are received. Final reports upon germination tests or upon different examinations as to purity will vary as to time, according to the number of samples on hand, amount of impurities, variety of seeds, etc. The following list shows the usual time required for final germination reports upon the more common seeds:

Alfalfa, alsike and other clovers, beans, peas, corn, cucumbers, cabbage, millet, rape, turnips, oats, and other cereals, five to seven days.

Beets, buckwheat, timothy, tomatoes, melons, and vetch, six to nine days.

Brome grass, fescues, salsify and spinach, eight to twelve days.

Carrots, celery, parsnips, orchard grass, redtop and tobacco, ten to fifteen days.

Blue grass, fifteen to thirty days.

It is hoped that all will recognize that there are many others sending in seeds for examination who wish "immediate replies." All samples will be examined in the order of their receipt. Reports by telephone or telegraph will be given at the expense of the sender of the sample.

Kinds of Impurities:

In making reports of tests, all seeds other than those of the variety under examination found in a sample will be considered as foreign seeds and therefore as impurities. Dirt, stems, hulls, sand, etc., will also constitute an impurity under the term "inert matter." While other kinds of grass seed found in a given sample constitute an impurity, their presence there may not be harmful or even objectionable. In view of this fact, the reports of inspection will have the total percentage of impurity divided into percentage of inert matter, percentage of other grass seeds and percentage of weed seeds. For example, if a sample of timothy is found to be 95 per cent. pure and the five per cent. of impurity to be alsike clover and redtop, both the seller and the buyer ought to know it.

Expenses of Tests and Analyses:

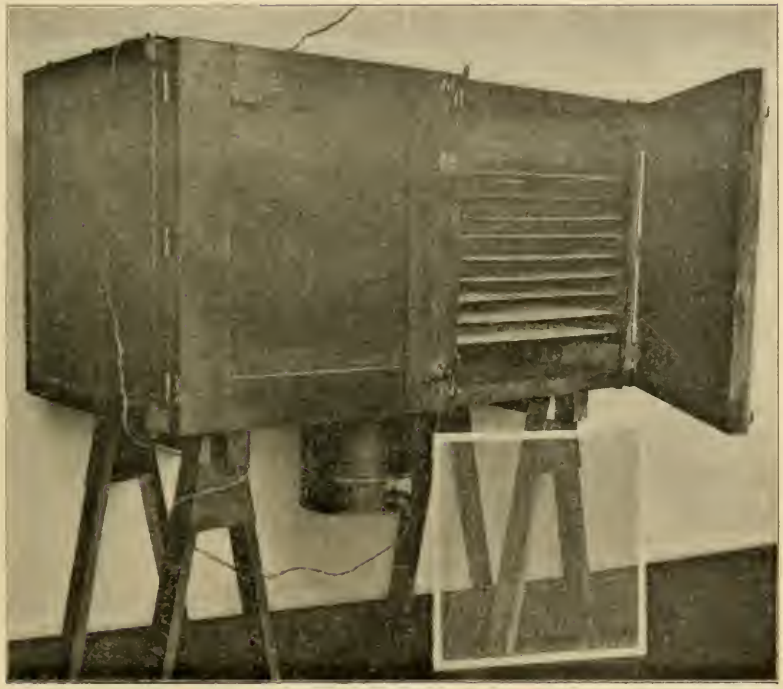
As no funds are available for the Secretary of the State Board or for the Experiment Station to conduct the tests, a nominal charge, sufficient to cover the cost of making them, must be made. The charge for making a purity test will be *seventy-five* cents per sample. For seeds sold in mixtures the charge will be *seventy-five* cents for the sample and ten cents additional for each kind of seed said to be contained therein. The charge for making a germination test will be *twenty-five* cents per sample. Seeds will be tested for any resident of the state, whether a dealer or not, at the above rates.

Methods of Examination and Testing:

For purity tests the regulations offered in Circular No. 34 of the Office of Experiment Stations are followed with only minor variations. A portion of the original sample is filed away in a properly numbered, heavy manila envelope for future use or for a retest if one is demanded. A smaller envelope which contains the pure seed obtained upon separation is also filed within the larger one. An ordinary card index file with 5 x 8 drawers, divided, is used for this purpose.

The germinating chamber is a "home-made" affair, 2⅜ x 2½ x 5 feet over all. It contains 22 shelves two feet square. The shelves are made of quarter-inch mesh galvanized wire netting, bound on the edges with galvanized iron. The temperature and humidity is maintained by means of water contained in a copper cylinder, 12 inches in diameter and 10 inches deep, suspended from the bottom of the chamber. The water is kept at the proper temperature by either a gas flame or an electric bulb placed underneath and controlled by a thermostat. The seeds are placed in folds of blotting paper on the trays, the latter being both removable and interchangeable.

The records of all tests and examinations are kept in a specially designed book, a duplicate of the original being detached and forwarded as the official report to the sender of the sample. The form of the record kept, a view of the germinating chamber, a corner of the seed testing room, and the style of envelope used for filing may be noted from the illustrations.



SEED GERMINATOR.

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New Hampshire

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